

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (cancelled)

2. (previously presented) An explosively operated tool, comprising
a housing;

a barrel assembly mounted within the housing;

a piston within the barrel assembly and actuated upon firing of the tool to drive a fastener in the forward end of the barrel assembly into a substrate, wherein the barrel assembly is mounted for axial movement within the housing and co-operates with a mass mounted for rearwards movement relative to the housing in opposition to a biasing force to absorb recoil on firing of the tool; and

a resetting mechanism for resetting the piston into a rear part of the barrel assembly after firing, said resetting mechanism being powered in response to displacement of said mass on recoil;

wherein the resetting mechanism comprises

engagement means for engaging the piston in a forward position in the barrel; and

displacement means for displacing the engagement means rearwardly to thrust the piston rearwardly, said displacement means comprising an energy source in which energy is stored as a result of displacement of the recoil mass upon recoil.

3. (original) A tool according to claim 2, wherein the energy source comprises a spring in which potential energy is stored in response to displacement of the recoil mass, said potential energy suddenly being released to cause the piston to be propelled rearwardly.

4. (original) A tool according to claim 3, wherein the recoil mass is propelled rearwardly against a strong resilient bias to absorb the recoil force and is then propelled forwardly by that bias, the spring associated with the resetting mechanism being charged with potential energy in response to the forwards movement of the recoil mass.

5. (previously presented) A tool according to claim 2, wherein the engagement means comprise gripping means for gripping the piston at a forward end portion of said piston when the piston is in the forward position within the barrel assembly.

6. (previously presented) A tool according to claim 5, wherein the gripping means are interposed between front and rear barrel sections of the barrel assembly.

7. (previously amended) A tool according to claim 5, wherein the gripping means comprise balls arranged around the axis of the piston to engage a peripheral surface of the piston, said balls co-operating with an inclined surface to force the balls into gripping engagement with the piston upon rearwards movement of the gripping means relative to the piston.

8-13. (cancelled)

14. (previously presented) An explosively operated tool for driving a fastener into a substrate, said tool comprising:

a housing;

a barrel mounted to the housing for axial movement relative to the housing between first forward position and first rearward position;

a piston axially displaceable within the barrel between a second forward position and a second rearward position, said piston being explosively driven forwardly from the second rearward

position to the second forward position, causing a recoil movement of said barrel from the first forward position to the first rearward position; and

a resetting mechanism connecting the barrel and the piston for automatically resetting the piston from the second forward position to the second rearward position in response to a return movement of the barrel from the first rearward position to the first forward position.

15. *(cancelled)*

16. (previously added) A tool according to claim 14, wherein said resetting mechanism comprises:

a catching element releasably engaging the piston; and

a spring attached to the barrel and the catching element, respectively;

wherein said spring is configured so that potential energy is stored in said spring in response to the recoil movement of said barrel and is not released until said barrel has passed an intermediate location between the first rearward position and the first forward position on the return movement.

17. (previously added) A tool according to claim 16, wherein said barrel has a latch that engages the catching element and rigidly connects the barrel with the catching element when said barrel is between the first rearward position and the intermediate location on the return movement, said latch is disengaged from said catching element when said barrel is between the intermediate location and the first forward position.

18. (previously added) A tool according to claim 16, wherein the catching element is configured to engage and rearwardly drive the piston when the catching element is driven rearwardly when the energy is released by the spring.

19-21. *(cancelled)*

22. (withdrawn) An explosively operated tool for driving a fastener into a substrate, said tool comprising:

a housing;

a barrel assembly mounted to the housing for axial movement within and relative to the housing, said barrel assembly comprising a first portion, a second portion axially moveable relative to the first portion and a resilient element which is compressible and expandable in an axial direction of the housing, said resilient element being interposed between and connecting the first portion and the second portion; and

a piston axially displaceable within the barrel assembly, said piston being explosively driven forwardly thereby causing a recoil movement of said barrel assembly.

23. (withdrawn) The tool of claim 22, wherein the housing has a stop element defining a rear stop position for the first portion of said barrel assembly during said recoil movement, the second portion of said barrel assembly being rearwardly displaceable further from the rear stop position in said recoil movement causing potential energy to be stored in said resilient element.

24. (withdrawn) The tool of claim 23, further comprising a locking element which is more rigid than said resilient element in the axial direction of said housing, said locking element engaging the first and second portions of said barrel assembly once the potential energy stored in said resilient element has reached a predetermined amount.

25. (withdrawn) The tool of claim 24, further comprising a unlocking element which disengages the locking element from one of the first and second portions of said barrel assembly to release the predetermined amount of stored potential energy for resetting the piston.

26. (withdrawn) The tool of claim 25, wherein said unlocking element further defines a front stop position for the second portion of said barrel assembly.

27. (withdrawn) The tool of claim 24, wherein said locking element includes a pivotable latch carried by the second portion of said barrel assembly.

28. (withdrawn) The tool of claim 27, further comprising a unlocking element which pivots the latch and disengages the latch from the first portion of said barrel assembly to release the predetermined amount of stored potential energy for resetting the piston, said unlocking element extending inwardly from a wall of said housing.

29. (withdrawn) The tool of claim 22, wherein the first portion of said barrel assembly comprises first and second bodies axially moveable relative to each other, the first portion of said barrel assembly further comprising a gripping surface which is moved radially inwardly to grip the piston when the first and second bodies are in a first relative position and radially outwardly to release the piston when the first and second bodies are in another, second relative position.


30. (withdrawn) The tool of claim 29, wherein the first portion of said barrel assembly further comprises a ball which is moveably retained by the first body and defines the gripping surface, the second body being connected to the resilient element and including an inclined surface to force the ball into gripping engagement with the piston upon rearwards movement of the second body relative to the first body.

31. (withdrawn) The tool of claim 22, wherein said barrel assembly further comprises a third portion which defines a foremost part of said barrel assembly, the third portion being projectable into and out of a front end of the housing.

32. (withdrawn) The tool of claim 31, wherein the third portion is connected to the first portion by a spring interposed therebetween.

33. (new) The tool of claim 2, wherein said engagement means are moveable relative to the forward end of said barrel assembly.

34. (new) The tool of claim 33, further comprising a spring other than said energy source, wherein said engagement means are connected to said forward end of said barrel assembly by said spring.

 35. (new) The tool of claim 2, further comprising braking means for catching and stopping the piston on rebound after said piston has been reset into the rear part of the barrel assembly by said resetting mechanism, said braking means being different from said engagement means.

36. (new) The tool of claim 14, further comprising braking elements for catching and stopping the piston on rebound after said piston has been reset into the second rearward position by said resetting mechanism, wherein said braking elements are not part of said resetting mechanism and operate independently of said resetting mechanism.

37. (new) The tool of claim 16, wherein said barrel comprises a front portion retractibly projecting from a front end of said housing and a rear portion completely received and moveable within said housing, said front portion being connected to said catching element which is connected to an end of said spring which has an opposite end connected to said rear portion.

38. (new) The tool of claim 37, further comprising another spring disposed between and connecting said front portion and said catching element.
